Clerical workers, the second largest occupational group, is expected to continue its steady growth. Employment of Clerical workers in Printing and Publishing advanced by 22 percent from 1970 to 1978, and is expected to climb another 25 percent by 1985. Nearly 60 percent of these workers are Secretaries (29.1 percent), Typists (12.2 percent), Proofreaders (8.6 percent), or Bookkeepers (8.3 percent).

An upward trend in the percent of Professional and Technical workers is noticeable on Table 1. They experienced the highest growth rate (54 percent) in this industry from 1970 to 1978, and are expected to increase another 25 percent by 1985. This group is dominated by one occupational category - Editors and Reporters. They comprise nearly one half of this group, other note worthy occupations are Artists (17 percent), Photographers (10 percent), and Accountants (6 percent).

Among the remaining occupational groups, the number of Managers and Sales workers is predicted to continue growing at a slightly faster pace than total industry employment. By 1985 they should comprise 17.5 percent of total employment in the industry. On the other hand while Operatives are expected to increase in number, it will be at a slower rate than in previous years. The actual number of both Service workers and Laborers is expected to decline from 1978 to 1985. Eighty percent of the Service workers in this industry are Janitors. The Laborers are mainly Freight and Material Handlers (42.2 percent) and Stock Handlers (31.6 percent).

Table I

Occupational Staffing Patterns For the Printing and Publishing Industry

	Percent of Industry		
Occupational Groups	1970	1978	1985
Professional, Technical, & Kindred	11.7	13.8	14.7
Managers, Officials, & Proprietors	8.5	9.5	9.8
Sales	7.8	7.5	7.7
Clerical	21.2	19.8	21.2
Craft & Kindred	34.0	34.3	32.6
Operatives	13.6	12.6	12.1
Service	1.6	1.2	0.9
Laborers except Farm	1.6	1.3	1.1
Farm Laborers	0.0	0.0	0.0

SUPPLY/DEMAND FOR SPECIFIC OCCUPATIONS, OCTOBER, 1983[1/]

By S. Hamper

MINNESOTA

Shortage Occupations: commissioned sales persons#, experienced computer programmers and systems analysts#, experienced and highly skilled office clerical workers#

Surplus Occupations: retail sales clerks, machinists#, truck drivers#, welders#, laborers#, factory workers#

CENTRAL MINNESOTA

Shortage Occupations: commissioned sales persons#, experienced clerk typists and stenographers, live-in health aides

Surplus Occupations: retail sales clerks#, nurse aides, welders#, machinists#, factory laborers#

MINNEAPOLIS-ST. PAUL

Shortage Occupations: commissioned sales persons#, experienced computer programmers and systems analysts#, highly skilled clerical workers#, part-time hotel/restaurant workers such as bus boys and waiters/waitresses

Surplus Occupations: machinists#, truck drivers#, factory assemblers#, laborers#

NORTHEASTERN MINNESOTA

Shortage Occupations: none

Surplus Occupations: entry level managers#, teachers#, social workers#, sales clerks#, bookkeepers#, office clerks#, waiters/waitresses#, cooks#, maids#, food production workers#, machinists, welders#, heavy equipment operators#, maintenance mechanics#, auto and diesel mechanics#, truck drivers#, carpenters#, painters#, bricklayers#, electricians#, pipefitters#, millwrights#, mining crafts#, laborers: construction, general, and mining#

NORTHWESTERN MINNESOTA

Shortage Occupations: commissioned sales persons, experienced clerk typists and stenographers, live-in health aides#, experienced heating/air conditioning mechanics

Surplus Occupations: retail sales clerks, nurse aides, welders#, factory laborers#

SOUTHERN MINNESOTA

Shortage Occupations: commissioned sales persons#, various engineering positions

Surplus Occupations: office clerks#, general laborers#

1/ Shortage occupations are those that are difficult to fill or go unfilled due to the lack of qualified applicants. Surplus occupations are those in which the number of qualified applicants greatly exceeds the number of openings.

This occupation has been listed as a shortage or surplus occupation in at least two out of the last three quarters of the Review.

Feature Article

PROBLEMS IN DEVELOPING INDUSTRY AND OCCUPATIONAL EMPLOYMENT PROJECTIONS

By Bev Jones*

INTRODUCTION

The 1990 Minnesota and Minneapolis-St. Paul industry and occupational projections will be available in Spring 1984. Because increased attention is being given to the projections for career choice and planning manpower programs, some attention should be given to the projections methodology. The methodology used for the projections is not without problems. This article will briefly describe the projections methodology and then look at its major problems and limitations. The first section will examine the industry projections and the second will deal with problems related to occupational projections.

METHODOLOGY

The Data Analysis System for Industry Employment (DASIE), a software package provided by the Bureau of Labor Statistics (BLS), was used in developing and evaluating State and area industry projections. 1/ The DASIE program was designed to provide:

1. A listing of industry employment time series data and projections for the Nation, State, and desired Labor Market Areas that can be easily updated.

2. The area analysis program which was designed to familiarize the analyst with the State or Area as a whole by analyzing historical trends in total industry employment and its composition.

3. Analysis of individual industries in detail through the use of the industry analysis program and five different shift-share models.

4. A means of formulating models and the ability to run specialized projections programs when standard programs were not satisfactory.

The methodology used by State employment security agencies to produce occupational employment projections was developed by the Bureau of Labor Statistics, U.S. Department of Labor in the 1960s. It is a variant of the fixed coefficient "manpower requirements" model that is used in both the U.S. and abroad to project manpower needs and is essentially an extension of the input/output model pioneered by Wassily Leontief in the mid-1930s. 2/ In its simplest form, the methodology used by the State employment security agencies involves the

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1/ For a more complete explanation of this procedure, see DASIE ANALYSIS SYSTEM for INDUSTRY EMPLOYMENT - Users Manual (May 1981) Cap Gemini Inc.

2/ It should be noted that the Leontief input/output model, and the input/output techniques that have been used for inter-industry analysis assume that not only labor, but other inputs are a linear function of output. That is to say, if output doubles, all inputs also duouble, and if output halves, all inputs halve.

* This article was prepared by Bev Jones, Labor Market Analyst, Research and Statistical Services Office, Minnesota Department of Economic Security. The sections of this article on assumptions found on pages 11, 12, and 14 were written by R. Spinola, Director of Research and Statistical Services Office and were published in an earlier article noted in the bibliography.

mathematical merging of projections of industry employment with occupational staffing patterns (called coefficients of manpower requirements) for the projected year (i.e., 1990) and then summing the individual occupational estimates across all industries to obtain total employment by occupation.

The following is a brief outline of the four major steps used in producing the industry and occupational projections. 3/

1. Development of a historical series of wage and salary employment by industry for the years 1960 through 1982. This was accomplished by utilizing the data collected from business establishments through the Current Employment Statistics (CES) program and the ES-202 reports. 4/

2. Development of projections of employment for 335 industries for the State and Twin Cities area for 1990. The projections are made by a variety of methods.

3. Adjustment of wage and salary employment to total employment by industry. This was achieved by adjusting the wage and salary data to the "one person, one job" concept by excluding the secondary jobs of multiple jobholders, and by adding an estimate of workers with a job but on unpaid leave, as well as adding the number of self-employed, unpaid family workers, agricultural workers and domestics.

4. Development of occupational estimates by industry. This step is performed through the use of Census-based staffing pattern matrix containing approximately 500 occupations for all 335 industries.

INDUSTRY PROJECTIONS

Problems related to making industry employment projections fall into four major categories:

1. Developing a consistent historical employment series.

2. Limitations dictated by economic and social assumptions.

3. Establishment of relationships between employment data and other economic, social, and political variables.

4. Adjusting the nonagricultural wage and salary employment to total employment.

Historical Employment Series

The first problem that one runs into in producing industry projections is developing a consistent historical time series of employment at the desired level of industry detail. Firms are classified into different industrial categories

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3/ For a detailed explanation of the methodology used, see bibliography at end of this article.

4/ The CES program is administered by the Research and Statistical Services Office in cooperation with the Bureau of Labor Statistics, U.S. Department of Labor. The ES-202 is a report on monthly employment covered by the Minnesota Unemployment Insurance Law, also administered by the Research Office.

according to the product they produce or the service they perform. The system used is called the Standard Industrial Classification (SIC) coding system. Over the years changes have been made in this system. Unfortunately when major revisions are made it creates a break in the series. In 1972, there was a major revision of the SIC coding system. As a result, the employment series for 1960 to 1974 is on one code, the 1967 SIC code, and 1975 forward is on another, the 1972 SIC code. In order to make the data comparable, the industries affected by the code change have to be identified and relocated in the new classification. In the cases where an entire three digit SIC code was moved from one category to another, this was relatively easy. 5/ However, in many cases, only part of a three or four digit SIC code was to be moved. Ultimately in these cases, it was necessary to perform the tedious job of locating this employment by individual firm and moving it to the new industry category. This process had to be completed for 15 years of data.

In preparing the Minneapolis-St. Paul SMSA 6/ time series for the projections, there are two problems in addition to the ones mentioned above for the State. First, the historical time series is only available on a two or at most three-digit SIC code level prior to 1975. Secondly, the Census geographic definition of the Minneapolis-St. Paul SMSA changed from five counties to nine counties. Prior to 1974, the employment statistics for the Twin Cities area were based on a five county definition. As a result, four years of data, 1970 through 1973, was not compatible with the rest of the series. In order to extend the time series back to 1970, employment from the four "new" counties had to be collected and manually added to the original five county area. Additionally, county data had less detail than the metropolitan area. This necessitated some allocation of employment at the three and four digit level in order to complete the series.

Assumptions 7/

There are three key factors that determine the level of employment and its occupational and industrial composition. These are: 1) change in the composition of aggregate demand, 2) the rate of economic growth, and 3) technological change. 8/ Each of these factors represent a complex relationship that exists between certain social and economic variables. Considerable interaction occurs between these factors which makes measurement of their effects difficult. Therefore, in order to produce industry and occupational projections, certain basis assumptions are necessary. Unfortunately, along with the assumptions there are also problems and disadvantages.

5/ The SIC coding system is set up on a division, two-digit, three digit, and four-digit industry code basis. For example: Manufacturing is a division; 35-Machinery Except Electrical, the two-digit; 352-Farm and Garden Machinery and Equipment, the three-digit; and 3534-Garden Tractors and Lawn and Garden Equipment, the four-digit.

6/ The Minneapolis-St. Paul Standard Metropolitan Statistical Area (SMSA) currently consists of nine Minnesota Counties; namely, Anoka, Carver, Chisago, Dakota, Hennepin, Ramsey, Scott, Washington, and Wright. Previously it consisted of Anoka, Dakota, Hennepin, Ramsey, and Washington Counties.

7/ K. Pinola & Bev Jones, "The Development and Use of Occupational Projections," The Review of Labor and Economic Conditions, Vol. 7, No. 3, November 1980.

8/ Factors 1 and 2 will be covered in this section. Factor 3 relates to occupational projections and will be discussed in that section of this article.

Assumption 1

Changes in the composition of aggregate demand will essentially follow the historical trend. Aggregate demand is here defined as the expenditure side of Gross National Product (GNP), and its composition the major components of GNP.

The main problem that makes our projection of industry employment difficult is that the linkages that exist between Minnesota industry employment and GNP and its components are not always well established. Thus, while we employ a variety of techniques (i.e., shift-share, location quotient, regression, and ratio analysis) to establish these linkages, we frequently need to rely on subjective assessments of the competitive position of Minnesota industry to render a final judgement. In addition, while some of the tertiary or services sector growth follows the national pattern, there are others that are unique to the State or region. Consequently, it is not always possible to simply link the composition of State economic activity to the composition of national aggregate demand.

Assumption 2

The rate of economic growth will return to the long-term historical trend. This assumption is based on the behavior of the two primary forces that drive economic activity; namely, resource availability and productivity. Implicit in this assumption is that no severe shortages of capital and/or labor will occur, and that technological improvements will follow historical trends. On the other hand, an explicit assumption is made that labor force growth will moderate due to known population dynamics and a slowing down of labor force participation rates.

The problem with Assumption 2 is that both labor force growth and productivity are closely tied to the level of economic activity. Hence, a high degree of circular reasoning is involved in projecting the changes in the labor force, productivity, and output. To partially get around this problem, the Bureau of Labor Statistics assumes a national unemployment rate that approximates a full-employment economy. Such an assumption, while essential for their projections, may not bear any relation to reality. On the other hand, linking the state unemployment rate to the national rate is not a precise exercise, thus further complicating the projection of State industry estimates. The State analyst might be tempted to project an unemployment estimate that is not tied to the national rate, but this can only lead to inconsistent results if State industry employment estimates are linked to the national unemployment rate.

Relationship Between Employment and Other Variables

Probably the most difficult problem in making industry employment projections is establishing relationships between industry employment and other available economic and social variables. Once the time series is reconciled and the assumptions are established, regression analysis is applied. Minnesota and Twin Cities industry employment were used as the dependent variables. Data series such as time, National industry employment, GNP, population, number of households, personal income, per capita income, disposable income, housing starts, unemployment rates, production workers hours, U.S. gross private domestic expenditures, and value of U.S. exports were used as independent variables. Shift-share analysis is also used.

All these exercises are performed in an effort to establish or discover some sort of relationship between employment and the different variables that can be used as predicators. The difficult part of this process is evaluating the results of the statistical analysis and recognizing strong or reliable relationships between variables that can be utilized in making industry projections.

Adjustments to Wage and Salary Employment

The occupational matrix used for projecting employment includes the self-employed, unpaid family workers, farm workers, and domestic employees. The historical employment time series used in the industry projections is nonagricultural wage and salary employment only. Estimates of the ratio of self-employed and upaid family workers to wage and salary employment by industry had to be made. This was done using the 1980 Census data with the Current Population Survey (CPS) data and labor force estimates used as controls. Estimates of the number of farm workers and domestics were also added to obtain the total number of jobs. Since these data sets did not agree, adjustments had to be made.

Another major problem is the allocation of government workers among the various industries. The Census concept of government employment by function or industry is utilized in the occupation-industry matrix; accordingly, the number of government workers in schools, hospitals, construction work, etc., had to be estimated and assigned to their respective industries. This concept is in contrast to the concept used in nonagricultural wage and salary work force series, in which all work for government agencies is considered a separate industry division, classified by employer: Federal, State, and local.

Summary

Besides having to deal with less than ideal data on employment by industry, the number of self-employed, unpaid family workers, multiple jobholders, and the limitations of necessary economic assumptions, if one wishes to tie Minnesota employment to the National picture, one must choose from the three sets of industry projections produced by BLS. The three different scenarios, high growth, medium growth, and low growth are based on three different sets of economic assumptions.

Another problem area that has not been mentioned is that of recessions and booms. Because cyclical expansions and contractions in economic activity affect industries to different degrees, it is very difficult to make allowances for these swings. It is also nearly impossible to predict their severity or intensity.

In summary, the process of projecting industry employment is not a straightforward, precise mathematical or scientific process. At almost every stage of the procedure, decisions based on the analyst's knowledge and experience must be made.

OCCUPATION PROJECTIONS

The occupational projections were prepared using the Industry/Occupation Employment Matrix approach. The matrix is a table showing the occupational staffing pattern of each industry, i.e., the ratio of employment in each occupation to total employment in the industry. The State and Minneapolis-St. Paul base period (1980) Industry/Occupation Employment Matrix was produced by the U.S. Bureau of Census. The matrix covers approximately 500 occupations cross-classified by 335 industry sectors.

The 1982 estimates and 1990 projections were developed following the procedure outlined below.

1. The 1980 State occupational patterns (ratios of individual occupational employment for each industry) were updated to 1985 by applying a national change factor computed from corresponding cells in the BLS National matrix.

2. To arrive at Minnesota and Minneapolis-St. Paul 1982 staffing patterns, straight line interpolation was applied to the Minnesota and Minneapolis-St. Paul 1980 and 1985 staffing patterns.

3. The resulting staffing patterns were applied to their respective industry employment controls for 1982. As National change factors for 1990 were not available, 1985 staffing patterns were used for the 1990 projections.

4. Occupational employment levels were then computed for both years by aggregating across industries.

Assumptions 9/

In order to develop occupational projections, two assumptions in addition to the ones covered under Industry projections were made. They are:

Assumption 3

Inputs of production are always combined in fixed proportions. This is also known as the assumption of linearity between inputs and outputs. What this means is that if output increased by 25 percent, employment of each occupation in that industry would also increase by 25 percent. Although we know this to be untrue, there is insufficient data available to develop reliable staffing patterns that are functionally related to output changes.

Assumption 4

Changes in technology in a given industry occur uniformly over time between different geographic areas. The same relative change factors are assigned to the base year State staffing patterns as those projected for the Nation. It is unfortunate that current data systems are not equipped to provide more definite information on the diffusion of technology within a given industry. One would expect that over a period of time, differences in technology within an industry would be reduced and, except for climatological reasons, State and National staffing patterns would converge.

9/ R. Pinola and Bev Jones, "The Development and Use of Occupational Projections," The Review of Labor and Economic Conditions, Vol. 7, No. 3, November 1980.

Staffing Patterns

Two major inter-related problems surface when estimating the occupational distribution of employment by industry related to industrial expansion or contraction. First, there are no allowances made for changes that may occur in the occupational distribution within an industry. In reality, if an industry's employment were to double, it is highly unlikely that every occupation within that industry would also double.

Secondly, there are no provisions for introducing additional occupations into an industry that are not in the base year matrix. You can only change the employment level of occupations already in the matrix. The size of the industry influences the occupational distribution and composition of employment within that industry. Generally, larger industries have a greater occupational diversification than smaller ones. Therefore, large percent changes in small industrial cells are far more likely to lead to occupational estimates that are suspect than estimates for larger cells.

Although alterations of the staffing pattern ratios due to changes in the size of an industry are not incorporated into the methodology for estimating occupational employment requirements, adjustments are made for occupational staffing pattern changes that occur or are expected to occur over time. These adjustments, called "change factors", are applied directly to the staffing pattern matrix for the base year.

Again, there are two problems that should be noted relating to this step of the methodology:

1. Only projected national staffing pattern change factors are available. This makes it necessary to assume that Minnesota's staffing patterns are changing in the same direction and magnitude as the United States.

2. Currently projected National change factors for 1990 are not available. This necessitates the use of static staffing patterns for 1985 through 1990.

Job Opening Estimates

Since one of the products of the projections program is an estimate of the number of job openings by occupation, a few words should be mentioned about the problems and limitations of these estimates. First, these job openings can be divided into two types: replacement requirements and growth requirements.

Replacement needs, which occur when workers shift occupations, change localities, or leave the labor force represent a significant portion of the total openings. Replacement needs produced by the projections program are only those openings due to persons leaving the labor force due to death, retirement, disability, or temporary withdrawal for personal reasons. This is commonly referred to as the "separation rate". Unfortunately, data limitations prevent reliable information about the number of openings created when workers shift occupations, yet such needs may be a larger source of job openings than growth, deaths and retirements combined.

Given the above observation, this poses the question: If occupational shifts and location changes cannot be taken into account when projecting job openings, how accurate a picture can be drawn with the partial data available? Since

separation rates vary not only from state to state, but from occupation to occupation, it follows that there will also be a variance in occupational shifts and location changes among states and occupations, making the task even more difficult. More research is needed in this area to develop data upon which openings created by shifts in occupations and changes in location can be estimated.

Replacement estimate problems are not limited to the lack of data on occupational shifts and location changes. There is also a lack of infomration on state occupational separation rates. The Bureau of Labor Statistics (BLS) estimates labor force separation rates by occupation and sex for the United States. These rates represent the net annual rates at which people withdraw from the labor force due to retirement, disability, family responsibility, or death. Briefly, the separation rate from the labor force for an occupation is computed by applying the age-specific rates by sex to the number employed in the occupation in each respective age-sex interval. This gives the number of separations which, when divided by the occupational employment total, results in a labor force separation rate for the occupation nationally. Because data that differentiate separation rates for specific occupations by State are not available, the BLS develops proxy rates by applying national age-and sex-specific separation data to the age and sex distribution of State employment in specific occupations. Although this methodology is an improvement over applying National occupational separation rates directly to State occupational employment (as was done in the past), separation rates by age and sex by occupation for Minnesota may not be the same as the Nation.

The other type of job opening, referred to as growth or expansion needs, are openings created by an increase in the number of persons employed as the result of industrial expansion. Stated simply, growth openings are the mathematical difference between the number of persons employed in a specific occupation in the reference or base year (1980 or 1982 in our case) and the projected year (1990). However, "growth requirements" can be due either to changes in industrial employment or changes in staffing pattern ratios. This can be determined only by a careful examination of detailed industry employment data.

Summary

In summary, despite the described limitations, industry/occupational projections represent an extensive data base that can be a valuable resource to those interested in planning for the future. However, these projections should be used as a tool in planning and not as an end in themselves. They should be used as an indicator of probable directions of the economy based primarily on trends and not to represent precise point estimates of employment for each industry or occupation.

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Brief Analysis Of Economic Conditions

THE NATIONAL AND STATE ECONOMIES IN THE THIRD QUARTER

By B. Boyle

Nation

Although some sectors of the economy were not as strong in the third quarter and October as in earlier months, developments in other areas, especially employment, unemployment and income, indicated that the recovery is still very solid. A number of economists believe that the fourth quarter growth in real gross national product will be considerably more than was forecast a month ago.

Labor market conditions have improved faster than economists had expected. The seasonally adjusted unemployment rate, which fell 0.5 of a percentage point to 8.8 percent in October, has declined by two full points since the recovery began in December. The recent 10 month drop in the rate was significantly larger than the declines in similar periods of the past four expansions. Although total employment (seasonally adjusted) did not increase in October, it has grown by 2.4 million since May and by 2.9 million since the low point of last December. Also, seasonally adjusted nonfarm payroll employment rose by 320,000 in October after a huge gain of 1,018,000 in September and has grown by 2.4 million since last December. The largest employment gains since the upturn began in December were in manufacturing (847,000), services (809,000) and trade (413,000).

Other indicators of economic activity showed varying degrees of strength in the third quarter and in October. The decelerations in the advances of real gross national product and industrial production were probably positive developments in that the earlier rates of expansion were not sustainable and that continued rapid growth might lead to renewed inflation. On the other hand, both retail sales and personal income showed considerable strength in September and October. Moreover, the index of leading indicators rose for the fourteenth consecutive month in October, climbing a healthy 0.8 percent.

State

The Minnesota economy gathered strength in the third quarter as the unemployment rate began to drop below the year earlier levels in July and total employment showed increasingly larger over-the-year gains from August through October. In addition, seasonally adjusted nonfarm wage and salary employment rose very sharply in October after a strong increase in the third quarter.

Minnesota's seasonally unadjusted unemployment rate fell to 6.4 percent in October, down from 6.6 percent in September and averages of 8.3 percent and 7.1 percent in the second and third quarters, respectively. The June to October decline in the rate was the largest since labor force data were first computed in 1970. However, the current October rate was still high compared to the rates of past Octobers, only exceeded by the 7.3 percent of October, 1982. Also, unadjusted total employment which began to show over-the-year gains in August was a strong 4.1 percent above the year earlier level in October. This October's over-the-year increase was the largest since December 1978. Even more important, seasonally adjusted nonfarm payroll employment rose by a very robust 9,500 in October after a gain of 16,400 between June and September. Payroll employment has risen by 42,100 since the recent low in December but is still 52,000 below the pre-recession high in January, 1981. The largest employment gains since December were in trade (13,000), services (11,600) and manufacturing (8,400).

Forecasts

FORECASTS OF GNP AND MINNESOTA PAYROLL EMPLOYMENT

By C. Cline

Actual estimates for the third quarter of 1983, together with forecasts for the fourth quarter of 1983 through the third quarter of 1985 are reported in the table below. The errors between actual value and the one-quarter-ahead forecast for the third quarter are as follows: real GNP (+0.12 percent), total employment (-0.02 percent), Mining (+16.56 percent), Construction (-3.67 percent), Manufacturing (+0.47 percent), Transportation (+2.75 percent), Trade (-1.32 percent, Finance (+0.30 percent), Service (-0.37 percent), and Government (-0.18 percent). The forecast error is positive when the forecast value is larger than the actual estimate.

The forecasts continue to be for growth. Rates of growth over the four quarters beginning with the fourth quarter of 1983 are forecasted as 4.94 percent for real GNP and 5.09 percent for total Minnesota wage and salary employment. These represent a slowing in the growth rate of real GNP and a slight increase in the rate for Minnesota employment. This pattern is typical of the tendency of Minnesota employment growth to follow behind that of real GNP by about two quarters as reported by the publication, Cyclical Sensitivity in Minnesota, available upon request. (See the back cover of this publication.)

Quarter	Real GNP (Billions of 1972 Dollars)	MINNESOTA PAYROLL EMPLOYMENT, BY QUARTER (In Thousands)								
		Total Nonagricultural Wage & Salary	Mining	Contract Construction	Manufacturing	Transportation, Communications, & Public Utilities	Retail and Wholesale Trade	Finance, Insurance, & Real Estate	Services	Government
CURRENT										
1983-III	1553.6	1715.84	9.06	71.09	346.38	90.33	439.59	99.30	393.66	266.44
FORECAST										
1983-IV	1584.99	1744.41	9.21	67.72	340.98	94.08	443.05	98.99	398.71	287.10
1984-I	1605.62	1711.66	9.46	51.08	337.30	93.26	431.45	99.26	395.76	288.39
1984-II	1625.71	1727.68	11.05	64.26	346.14	94.96	453.03	101.47	409.41	289.42
1984-III	1646.75	1803.38	11.40	76.21	364.26	94.67	457.71	103.17	414.28	267.78
1984-IV	1663.80	1833.18	11.04	72.35	360.82	97.85	464.89	103.10	420.53	287.85
1985-I	1682.01	1793.74	10.54	54.44	357.52	95.82	453.75	103.38	418.11	289.76
1985-II	1698.87	1859.33	11.90	68.28	365.42	97.66	475.19	105.68	433.74	290.21
1985-III	1713.99	1884.29	12.05	80.25	382.89	97.94	477.92	107.33	437.80	269.52

Notes

1. These forecasts are produced using the Vector Autoregression model developed for Research by Rao Aiyagari.
2. The concept of employment forecasted is that of Nonagricultural Wage and Salary employment. The count represents the number of jobs held since the data is generated from a survey of employer payroll records. Groups included in labor force employment, but excluded here are the self employed, domestics, unpaid family workers, employees of nonprofit institutions, and those government workers not covered by unemployment insurance.
3. Employment forecasts are seasonally unadjusted values. Real GNP is seasonally adjusted.
4. Forecasts of major industry employment do not sum to the forecast of total wage and salary employment. This is due to random error in the forecasted values.
5. There is great diversity in the accuracy of our forecasts among the major industry division. More information on their accuracy can be obtained from the author on request.

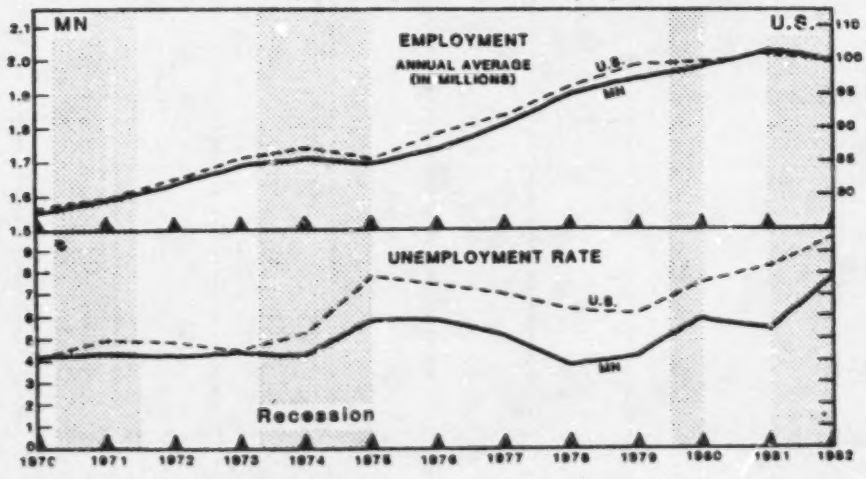
Labor Force Statistics

Labor Force Estimates	MINNESOTA (Numbers in '000's)			UNITED STATES (Numbers in '000,000's)		
	October 1983	Change From Last Mo.	Change From Year Ago	October 1983	Change From Last Mo.	Change From Year Ago
Civilian Labor Force	2228.0	9.0	65.3	112.1	-0.1	1.3
Employed	2086.3	12.8	81.9	102.7	0.3	2.9
Unemployed	141.7	-3.8	-16.6	9.4	-0.4	-1.6
Unemployment Rate						
Actual	6.4	-0.2	-0.9	8.4	-0.4	-1.5
Seasonally Adjusted	n.a	n.a	n.a	8.8	-0.5	-1.7

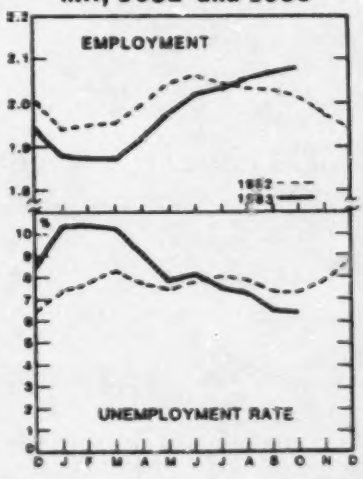
Historical Labor Force Series

Year	Minnesota (Annual Average in '000's)				United States (Annual Average in '000,000's)			
	Labor Force	Employment	Unemployment Number	Unemployment Rate	Labor Force	Employment	Unemployment Number	Unemployment Rate
1970	1625.0	1557.0	68.0	4.2	82.8	78.7	4.1	4.9
1971	1665.0	1593.0	73.0	4.4	84.4	79.4	5.0	5.9
1972	1709.0	1635.0	73.0	4.3	87.0	82.2	4.9	5.6
1973	1774.0	1694.0	80.0	4.5	89.4	85.1	4.4	4.9
1974	1779.0	1701.0	77.0	4.3	91.9	86.8	5.2	5.6
1975	1804.0	1697.0	107.0	5.9	93.8	85.8	7.9	8.5
1976	1849.0	1739.0	109.0	5.9	96.2	88.8	7.4	7.7
1977	1907.0	1809.0	97.0	5.1	99.0	92.0	7.0	7.1
1978	1979.0	1903.0	75.0	3.8	102.3	96.0	6.2	6.1
1979	2038.0	1953.0	85.0	4.2	105.0	98.8	6.1	5.8
1980	2108.0	1982.0	125.0	5.9	106.9	99.3	7.6	7.1
1981	2143.0	2024.0	118.0	5.5	103.7	100.4	8.3	7.0

MN and the U.S., Employment & Unemployment Rate



MN, 1982 and 1983



Labor Market Conditions

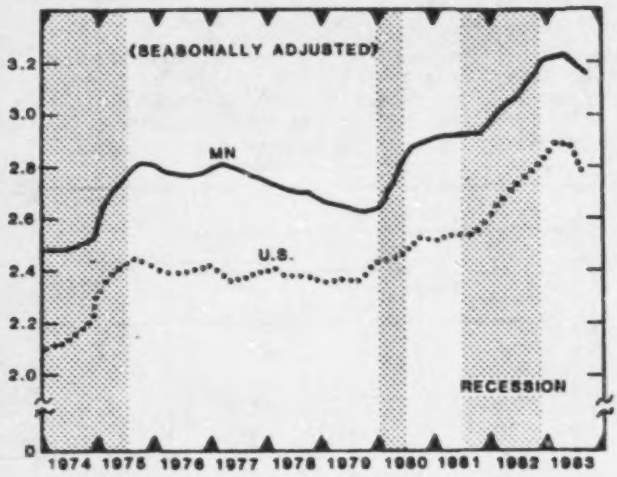
The table and graphs in this section describe the behavior of the market for labor services in terms of its quantity, price, and supply. The quantity of labor services, which is the number of employed persons, is classified by industry. The price of labor services is roughly indicated by the industry wage. Unemployment estimates provide a qualified measure of excess labor supply. The degree to which persons participate in the labor market and the effectiveness of the market in utilizing labor services are indicated by Labor Force Estimates and by Other Rates of Labor Utilization.

Labor Force And Establishment Data	MINNESOTA (Numbers in '000's)			UNITED STATES (Numbers in '000's)		
	III Qtr 1983	Percent Change From		III Qtr 1983	Percent Change From	
		Last Qtr	Year Ago		Last Qtr	Year Ago
LABOR FORCE ESTIMATES						
Total Labor Force	2215.8	2.9	0.7	113252	1.9	1.4
Employment	2059.0	4.3	1.5	102936	2.9	2.1
Nonagriculatural	n.a	n.a	n.a	99049	2.6	2.1
Agriculatural	n.a	n.a	n.a	3886	9.2	0.9
Unemployment	156.8	-12.4	-7.9	10316	-7.3	-4.6
By Reason - New Reentrants-%*	n.a	n.a	n.a	34.6	3.9	3.3
By Reason - Quit-%*	n.a	n.a	n.a	7.5	5.6	2.7
By Reason - Lost-%*	n.a	n.a	n.a	57.9	-2.7	-2.2
Unemployment Rates						
Actual	7.1	-14.5	-7.8	9.1	-9.0	-6.2
Seasonally Adjusted	n.a	n.a	n.a	9.4	-6.9	-6.0
OTHER RATES OF LABOR UTILIZATION						
Participation Rt (Labor Force/Population 16+)	n.a	n.a	n.a	64.3	0.6	0.3
Full Employment Deficit - Percent of Workers1/	3.1	4.3	3.7	5.1	6.0	5.7
Manpower Utilization Rate2/	82.7	1.2	3.0	80.7	1.0	1.4
NONAGRICULTURAL WAGE AND SALARIED POSITIONS						
Employment*	1706.8	0.8	0.5	90117	0.7	0.9
Mining	8.6	-9.5	32.3	1022	2.4	-8.2
Construction	61.8	5.8	4.0	4015	4.0	3.1
Manufacturing	339.8	0.9	-1.1	18790	1.7	0.6
Durables	200.4	0.8	-1.5	11017	2.3	0.4
Nondurables	139.4	1.0	-0.5	7773	0.8	0.9
Trans., Comm., & Public Utilities	90.6	-2.9	-3.9	4781	-4.2	-5.6
Trade	434.7	1.4	0.8	20538	0.7	0.6
Fin., Ins., & Real Estate	98.3	0.3	0.4	5479	0.8	2.5
Services	390.8	1.3	2.6	19829	1.4	3.8
Government	282.2	-0.4	-0.7	15663	-0.4	-0.3
Average Weekly Hours*						
Mining	33.9	3.0	-10.8	42.6	1.2	0.7
Construction	38.2	6.1	4.1	38.1	2.1	1.6
Manufacturing	40.1	2.6	3.1	40.4	0.7	3.6
Durables	40.6	2.0	2.8	41.0	1.2	4.1
Nondurables	39.4	2.9	3.1	39.6	0.3	2.9
Trans., Comm., & Public Utilities	38.4	0.8	1.1	39.0	0.3	0.0
Trade	30.0	-0.3	2.4	31.8	-0.3	-0.6
Fin., Ins., & Real Estate	n.a	n.a	n.a	36.1	-0.3	-0.3
Services	n.a	n.a	n.a	32.7	-0.3	0.0
Average Hourly Wage						
Mining	12.19	1.4	-3.9	11.29	0.4	3.5
Construction	14.59	-0.5	1.5	11.87	0.5	1.8
Manufacturing	9.52	-0.4	4.4	8.85	0.7	3.5
Durables	9.72	1.7	5.7	9.41	0.7	3.1
Nondurables	9.27	-3.0	2.9	8.09	0.7	4.0
Trans., Comm., & Public Utilities	10.98	0.2	5.5	10.86	1.2	4.5
Trade	7.31	0.7	5.2	6.49	0.5	4.5
Fin., Ins., & Real Estate	n.a	n.a	n.a	7.28	0.1	6.4
Services	n.a	n.a	n.a	7.22	0.1	4.3
Estimates of Labor Turnover (Mfg. Only)	Estimates of Labor Turnover have been discontinued as of January 1, 1982.					

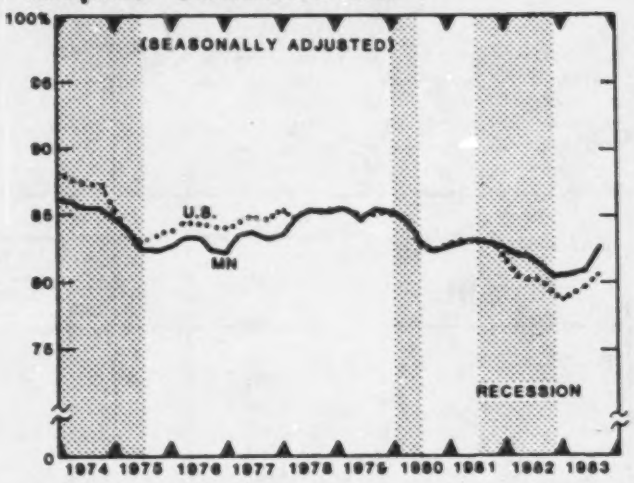
a/ Values are numerical values, not percent changes.

Labor Market Conditions

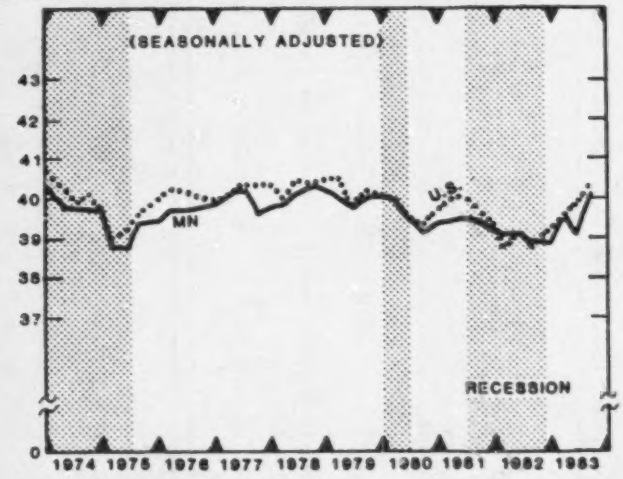
Ratio of Service to Goods Producing Jobs



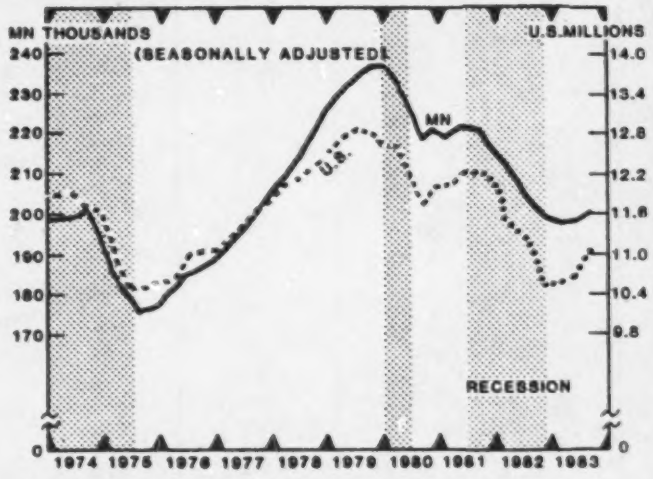
Manpower Utilization Rate



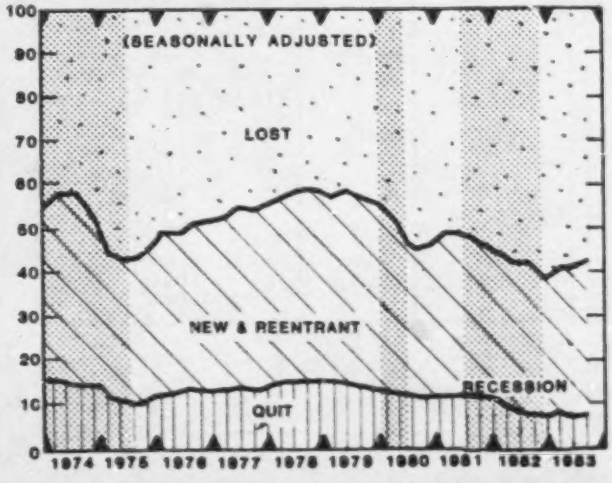
Average Weekly Hours, Manufacturing



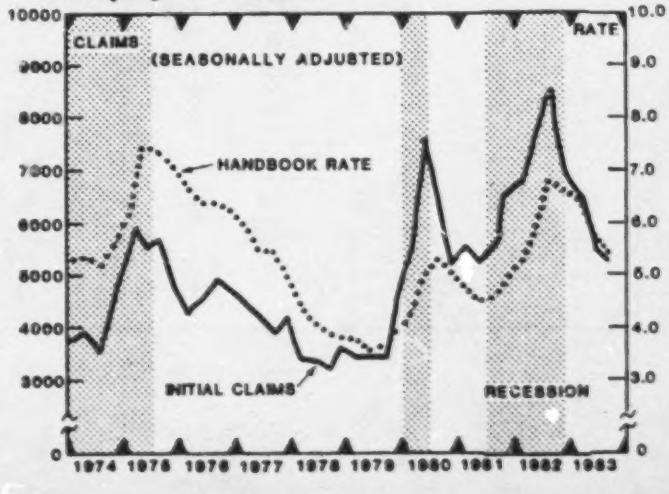
Manufacturing Employment, Durable Goods



U.S. Unemployment: Percent Distribution by Reason



MN Weekly Initial Claims & Handbook Unemployment Rate [1]



Labor Market Conditions

The Table below provides data on persons who file claims for unemployment compensation in Minnesota. Only those claiming benefits from the regular State program are represented, since data on the characteristics of Federal employees and veterans are not available, and data on those receiving benefits from extended programs is reported only when those programs are in effect. If those receiving extended benefits were included they would distort the numerical comparisons over time, but would not substantially change the percentage distributions other than to increase the proportion of long-term unemployed.

Persons Claiming Benefits	Third Quarter 1983			October 1983			Percent Long Term
	Number	Percent Change From		Number	Percent Change From		
		Last Qtr.	Year Ago		Month Ago	Year Ago	
By Age & Sex							
Male	19579	-41.7	-51.1	18137	0.7	-51.2	20.3
Under 45	14858	-42.8	-52.7	13634	0.1	-52.7	18.3
Under 25	3302	-49.8	-58.9	2970	9.8	-59.5	13.6
25-34	7399	-43.1	-53.1	6840	-0.7	-52.5	18.2
35-44	4157	-34.9	-45.0	3824	-4.9	-46.0	22.1
45 and Over	4721	-38.2	-45.3	4503	2.6	-46.0	26.3
45-54	2586	-38.9	-46.8	2597	6.2	-45.5	22.4
55 and Over	2135	-37.4	-43.4	1906	-1.9	-46.7	31.7
Female	12435	-15.5	-39.4	9603	-4.2	-44.1	28.7
Under 45	9116	-15.6	-41.3	7136	-4.2	-45.7	27.1
Under 25	2079	-24.7	-48.7	1810	4.0	-49.3	18.8
25-34	4202	-13.8	-39.3	3280	-5.7	-44.0	28.8
35-44	2835	-10.5	-38.0	2046	-8.1	-44.9	31.8
45 and Over	3319	-15.3	-33.4	2467	-4.1	-39.1	33.0
45-54	1870	-14.2	-35.5	1402	-3.4	-40.5	30.0
55 and Over	1449	-16.6	-30.4	1065	-5.0	-37.1	37.0
By Industry	32014	-33.8	-47.1	27740	-1.0	-48.9	23.2
Ag., For., Fish.	325	-54.2	-32.2	364	16.3	-34.5	12.5
Mining	2146	38.6	-72.9	3155	-0.03	-53.4	13.7
Construction	3203	-67.0	-46.5	2948	3.5	-50.0	11.8
Manufacturing	8003	-43.0	-59.2	6382	-3.0	-64.3	22.3
Pub. Utilities	1599	-35.8	-33.2	1029	-8.1	-46.2	26.7
Wholesale Trade	2362	-32.9	-37.6	2048	-1.1	-43.7	30.3
Retail Trade	4747	-24.0	-20.7	3740	-3.5	-33.5	28.7
Fin., Ins., Real Est.	986	-15.9	-25.9	909	0.9	-26.5	34.9
Services	7398	-0.5	-37.0	5590	-3.8	-40.3	30.7
Public Admin.	611	-14.4	-22.5	740	24.0	-20.7	16.8
Inf. Not Available	634	-16.6	26.8	835	10.7	61.2	1.7
By Occupation	32014	-33.8	-47.1	27740	-1.0	-48.9	23.2
Prof., Tech., Mgr.	6279	-0.02	-36.4	4880	-4.8	40.3	35.7
Clerical	4591	-12.0	-32.6	3986	-0.3	-37.1	30.0
Sales	1535	-21.9	-26.8	1348	-1.1	-30.0	30.8
Services	2843	-17.8	-31.3	2571	7.9	-31.7	24.8
Farm., For., Fish.	228	-58.5	-29.2	300	31.0	-30.2	10.1
Processing	1361	-51.7	-50.7	831	-13.4	-62.0	31.7
Machine Trade	1984	-40.5	-60.4	1676	-5.1	-65.1	19.3
Benchwork	2494	-37.7	-64.1	2145	3.2	-66.3	16.1
Structural Work	4447	-61.5	-49.1	4030	2.2	-52.8	13.4
Misc.	5738	-32.9	-58.0	5603	-2.0	-51.8	15.4
Inf. Not Available	514	-13.0	179.3	370	-19.4	102.2	39.0
By Duration	32014	-33.8	-47.1	27740	-1.0	-48.9	
0-14 Weeks	23567	-28.4	-48.5	21304	2.9	-40.6	
15+ Weeks (Long-Term)	8447	-45.3	-42.8	6436	-12.0	-65.2	

Labor Market Conditions

Minnesota Nonagricultural Wage & Salary Employment, Hours, and Earnings

INDUSTRY	EMPLOYMENT[1] (thousands)			PER CENT CHANGE FROM		PRODUCTION WORKERS' HOURS & EARNINGS					
						Average Weekly Earnings		Average Hourly Earnings		Average Weekly Hours	
	Oct. 1983	Sept. 1983	Oct. 1982	Sept. 1983	Oct. 1982	Oct. 1983	Sept. 1983	Oct. 1983	Sept. 1983	Oct. 1983	Sept. 1983
TOTAL NONAGRICULTURAL	1741.6	1732.8	1712.9	0.5	1.7						
MANUFACTURING	345.4	350.2	343.3	-1.4	0.6	392.69	384.40	9.72	9.61	40.4	40.0
Durable Goods	204.9	203.6	201.9	0.6	1.5	405.25	403.03	9.86	9.83	41.1	41.0
Furniture, Lumber and Wood	14.0	14.2	13.0	-1.7	7.1	408.83	441.76	10.17	10.37	40.2	42.6
Stone, Clay and Glass	8.4	8.5	8.8	-1.1	-4.6	384.91	377.91	9.72	9.74	39.6	38.8
Primary Metals	5.0	5.0	5.1	1.3	-0.6	365.66	369.34	8.79	8.67	41.6	42.6
Fabricated Metals	33.5	33.3	33.0	0.6	1.5	463.42	459.68	11.14	11.05	41.6	41.6
Nonelectrical Machinery	79.8	78.9	77.5	1.2	3.1	409.94	405.14	9.95	9.93	41.2	40.8
Electrical Machinery	26.0	26.0	26.1	0.1	-0.1	350.24	347.24	8.46	8.49	41.4	40.9
Transportation Equipment	6.2	6.0	6.0	2.8	3.7	498.70	441.98	11.36	10.65	43.9	41.5
Other Durable Goods [2]	31.9	31.7	32.4	0.7	-1.7	371.33	373.18	9.26	9.26	40.1	40.3
Nondurable Goods	140.5	146.6	141.4	-4.2	-0.6	375.88	362.00	9.54	9.33	39.4	38.8
Food and Kindred	46.7	52.5	49.0	-11.1	-4.8	336.15	308.74	8.51	8.04	39.5	38.4
Textile and Apparel	4.6	4.7	4.8	-2.3	-2.6	237.46	233.36	6.20	6.19	38.3	37.7
Paper and Allied	32.5	32.6	31.6	-0.3	2.7	472.33	473.86	11.01	11.02	42.9	43.0
Printing and Publishing	35.4	35.5	35.8	-0.2	-1.0	376.25	368.07	10.28	10.31	36.6	35.7
Chemical and Petroleum	9.3	9.3	9.2	-0.7	0.7	429.63	426.89	10.96	10.89	39.2	39.2
Rubber and Leather	12.0	11.9	11.0	0.4	9.0	311.00	310.18	8.12	8.12	38.3	38.2
NONMANUFACTURING	1396.2	1382.7	1369.6	1.0	1.9						
Mining and Quarrying	7.7	7.6	6.9	1.0	10.6	407.84	409.86	11.96	11.88	34.1	34.5
Metal Mining	5.4	5.2	4.8	2.8	12.1	418.21	417.57	13.11	13.09	31.9	31.9
Construction	71.7	71.6	65.9	0.1	8.8	554.19	549.82	14.70	14.86	37.7	37.0
Building	19.7	19.0	18.2	3.6	8.4	514.32	504.05	13.29	13.66	38.7	36.9
Highway and Heavy	15.1	15.7	12.5	-3.8	21.6	524.89	525.28	13.39	13.40	39.2	39.2
Special Trades	36.9	36.9	35.3	0	4.6	589.84	585.36	16.16	16.26	36.5	36.0
Transportation	62.6	61.7	62.0	1.5	0.9						
Railroads	13.4	13.4	13.2	0	1.1	521.19	521.19	11.48	11.48	45.4	45.4
Trucking and Warehousing	23.8	23.6	23.6	0.8	1.0	442.68	443.05	11.90	11.91	37.2	37.2
Public Utilities	32.9	33.3	33.8	-1.1	-2.5	505.85	505.04	12.49	12.47	40.5	40.5
Communications	18.7	19.0	19.7	-1.6	-5.2	469.85	469.45	11.63	11.62	40.4	40.4
Elec., Gas and Sanitary	14.3	14.3	14.1	-0.4	1.4	545.26	544.04	13.43	13.40	40.6	40.6
Trade	439.4	442.2	430.0	-0.6	2.2	226.50	225.46	7.33	7.32	30.9	30.8
Retail	327.1	329.1	317.8	-0.6	2.9	182.82	182.13	6.37	6.37	28.7	28.6
General Merchandise	46.2	44.7	44.7	3.4	3.4	167.61	172.86	5.84	5.92	28.7	29.2
Food Stores	45.8	46.7	44.5	-1.9	3.0	208.85	211.35	7.38	7.39	28.3	28.6
Automotive	34.6	34.8	34.0	-0.5	2.0	308.02	306.81	8.28	8.36	37.2	36.7
Eating and Drinking	108.1	111.6	106.1	-3.1	1.9	106.93	106.02	4.55	4.57	23.5	23.2
Wholesale	112.3	113.1	112.2	-0.7	0.1	379.78	375.12	9.89	9.82	38.4	38.2
F.I.R.E.	99.4	99.4	97.9	0	1.6						
Finance	47.9	47.7	45.7	0.2	4.7						
Insurance	35.5	35.4	35.5	0.5	0						
Real Estate	16.0	16.3	16.6	-1.8	-3.5						
Service Industries	395.6	395.3	383.4	0.1	3.2						
Hotel and Lodging	20.5	21.9	19.9	-6.4	2.6						
Business Services	60.2	59.6	57.9	0.9	4.0						
Health Services	135.6	136.1	133.1	-0.3	1.9						
Private Education	24.5	21.5	24.3	14.0	1.0						
Soc. Serv., Museums etc.	84.4	84.1	81.3	0.4	3.9						
Government	287.0	271.6	289.8	5.7	-0.9						
Federal	29.8	30.0	30.2	-0.5	-1.3						
State	74.4	68.2	74.1	9.1	0.3						
Local	182.8	173.4	185.4	5.4	-1.4						

[1] Totals may not add because of rounding.
[2] Includes Scientific Instruments and Miscellaneous Industries.

Labor Market Conditions

Labor Force Data: State, SMSAs, and Counties

Area or County	October 1983 Prelim. Labor Force[1]	Unemp.	Un. Rate
State of Minnesota	2228033	141709	6.4
Metropolitan Areas			
Duluth/Superior (Duluth City Only)	35508	3324	9.4
Fargo/Moorhead (Clay County, MN Only)	28642	1085	3.8
Minneapolis/St. Paul SMSA[2]	1209446	65488	5.4
Rochester SMSA (Olmsted Co.)	61650	2830	4.6
St. Cloud SMSA[3]	80145	5405	6.7
Counties			
Aitkin	5630	742	13.2
Anoka	114726	6430	5.6
Becker	12754	1210	9.5
Beltrami	16668	1176	7.1
Benton	12443	912	7.3
Big Stone	4050	218	5.4
Blue Earth	29468	1534	5.2
Brown	15918	957	6.0
Carlton	12246	1171	9.6
Carver	21342	873	4.1
Cass	10955	991	9.0
Chippewa	7335	434	5.9
Chisago	14991	781	5.2
Clay	28642	1085	3.8
Clearwater	4097	487	11.9
Cook	2370	242	10.2
Cottonwood	7585	339	4.5
Crow Wing	17551	1572	9.0
Dakota	113294	6041	5.3
Dodge	8706	540	6.2
Douglas	14012	886	6.3
Faribault	10981	540	4.9
Fillmore	12657	677	5.3
Freeborn	18467	1264	6.8
Goodhue	20550	1298	6.3
Grant	3647	166	4.6
Hennepin	549746	29584	5.4
Houston	10638	521	4.9
Hubbard	5800	561	9.7
Isanti	10574	804	7.6
Itasca	18356	2409	13.1
Jackson	8279	362	4.4
Kanabec	5629	492	8.7
Kandiyohi	19148	1015	5.3
Kittson	3466	211	6.1
Koochiching	7690	730	9.5
Lac qui Parle	6002	291	4.8
Lake	4480	1397	31.2
Lake of the Woods	1888	144	7.6
Le Sueur	11851	921	7.8
Lincoln	3967	147	3.7
Lyon	15511	715	4.6
McLeod	18861	1008	5.3
Mahnomen	2955	262	8.9
Marshall	6561	535	8.2
Martin	13742	689	5.0
Meeker	11494	802	7.0
Mille Lacs	9135	742	8.1
Morrison	12871	1104	8.6
Mower	18531	1193	6.4
Murray	6421	375	5.8
Nicollet	15041	662	4.4
Nobles	12334	631	5.1
Norman	4790	183	3.8
Olmsted	61650	2830	4.6
Otter Tail	25407	1637	6.4
Pennington	6573	423	6.4
Pine	9890	876	8.9
Pipestone	5956	350	5.9
Polk	15927	749	4.7
Pope	5826	377	6.5
Ramsey	269300	15254	5.7
Red Lake	2212	238	10.8
Redwood	11002	468	4.3
Renville	12413	684	5.5
Rice	24415	1680	6.9
Rock	5973	285	4.8
Roseau	5935	638	10.7
St. Louis (Inc. Duluth)	92970	15908	17.1
Scott	25508	1316	5.2
Sherburne	14746	1054	7.1
Sibley	8830	523	5.9
Stearns	52956	3439	6.5
Steele	16986	1027	6.0
Stevens	6059	223	3.7
Swift	6493	399	6.1
Todd	12120	730	6.0
Traverse	2979	149	5.0
Wabasha	10095	686	6.8
Wadena	5742	466	8.1
Waseca	9396	543	5.8
Washington	66118	3366	5.1
Watonwan	7172	451	6.3
Wilkin	4510	206	4.6
Winona	23757	1516	6.4
Wright	34421	1843	5.4
Yellow Medicine	7850	319	4.1

Technical Notes:

1/ Labor force data is computed according to BLS methodology. The method includes an adjustment to assure that the sum of the substate areas equals the separately estimated State total. This adjustment is Applied to all county and SMSA areas. County and area unemployment was multiplied by an adjustment factor of 1.71; employment was multiplied by 1.05. For a more detailed explanation see the Review of Labor and Economic Conditions, Vol. 4, No. 4, (February 1978 issue), p. 29.

2/ Anoka, Carver, Chisago, Dakota, Hennepin, Ramsey, Scott, Washington, and Wright Counties.

3/ Benton, Sherburne, and Stearns Counties.

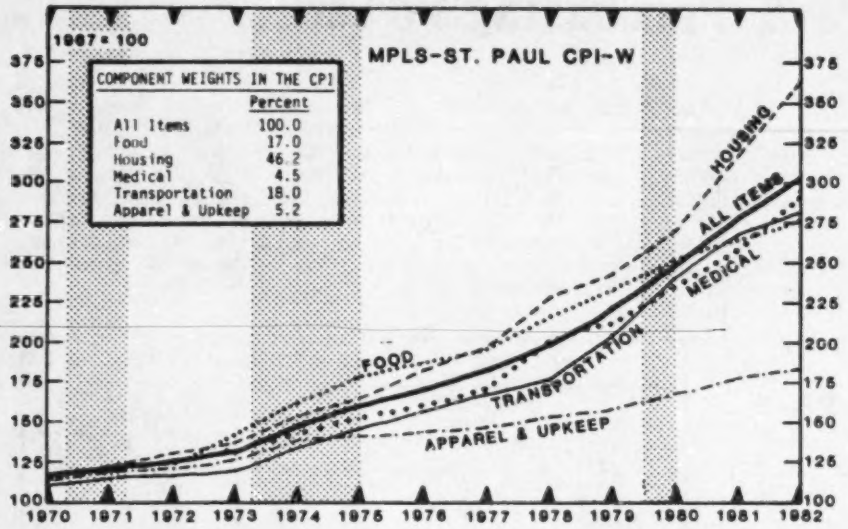
Income & Purchasing Power

This section describes how Minnesotans fare with respect to their ability to acquire goods and services needed to meet their needs and wants and how they compare with others in the United States in this respect. Real Per Capita Personal Income measures money income received by all individuals from wages and salaries, dividends, rent, professional and farm income, personal interest payments, and transfer payments, less personal contributions for social security, all adjusted for the price level as indicated by the CPI and for population. The Consumer Price Index (CPI) measures changes in the price of a representative combination of goods and services consumed by urban wage and salary workers relative to 1967. The inverse of the CPI (1/CPI) indicates the value of the dollar; when the CPI increases the value of the dollar falls. The change in the CPI over any period of time divided by the value at the beginning of the period gives the percentage change, or the rate of inflation.

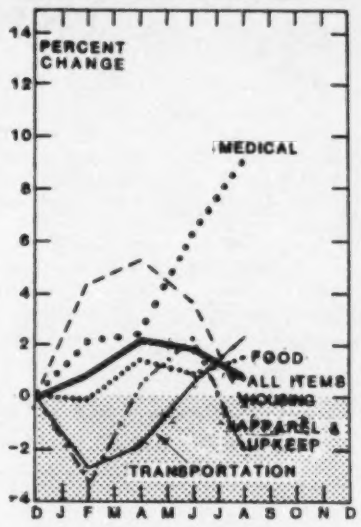
Income And Purchasing Power	MINNESOTA			UNITED STATES		
	III Qtr. 1983	Percent Change from		III Qtr. 1983	Percent Change from	
		Last Qtr.	Year Ago		Last Qtr.	Year Ago
INCOME STATISTICS						
Personal Income 1/*						
Total Personal Income (in Billions)	49.9	2.9	5.1	2761.4	1.8	6.6
Due to Labor 2/	n.a	n.a	n.a	1857.8	82.2	70.4
Due to Property 3/	n.a	n.a	n.a	621.2	26.8	20.9
Due to Transfer Payments 4/	n.a	n.a	n.a	402.9	-5.2	13.2
Total Disposable Personal Income	n.a	n.a	n.a	2361.5	2.6	7.8
As Percent of Total Pers. Inc.	n.a	n.a	n.a	85.5	0.8	1.1
Per Capita Personal Income 5/						
Current dollar Value	11972	2.8	4.3	11778	1.5	5.6
Real (1967) Dollar Value	3865	3.6	4.7	3932	0.4	3.0
Real Median Family Money Income 5/*						
All Families	8937	3.3	4.4	8765	0.3	2.7
Four Person Families	9271	3.0	4.2	10218	0.3	2.8
Earnings of Production Workers in Mfg. 6/						
Average Weekly Earnings	379.77	1.9	7.4	356.80	1.5	7.2
Real Average Weekly Earnings 7/	122.59	2.7	7.8	119.13	0.4	4.6
Income Related Criteria 8/						
Standard Budgets						
Low						
Moderate						
High						
Poverty Level Income						
Urban Family of Four	9300	---	10.1	9300	---	10.1
Nonurban Family of Four	7910	---	10.0	7910	---	10.0
MEASURES OF PRICE CHANGE AND INFLATION						
Consumer Price Level (CPI) 9/	309.8	-0.7	-0.3	299.5	1.1	2.5
Food	295.7	0.2	2.1	292.3	0.0	1.5
Housing	356.4	-3.6	-4.6	324.2	0.9	1.3
Transportation	288.2	2.9	1.7	303.8	2.3	2.1
Medical	331.4	4.8	12.3	357.6	1.5	8.0
Purchasing Power of the Dollar (1/CPI)	.32	0.9	0.3	.33	-1.2	-2.3
Wholesale Price Index	n.a	n.a	n.a	304.5	1.0	1.5
Industrial Commodities	n.a	n.a	n.a	317.1	1.1	1.3

Income & Purchasing Power

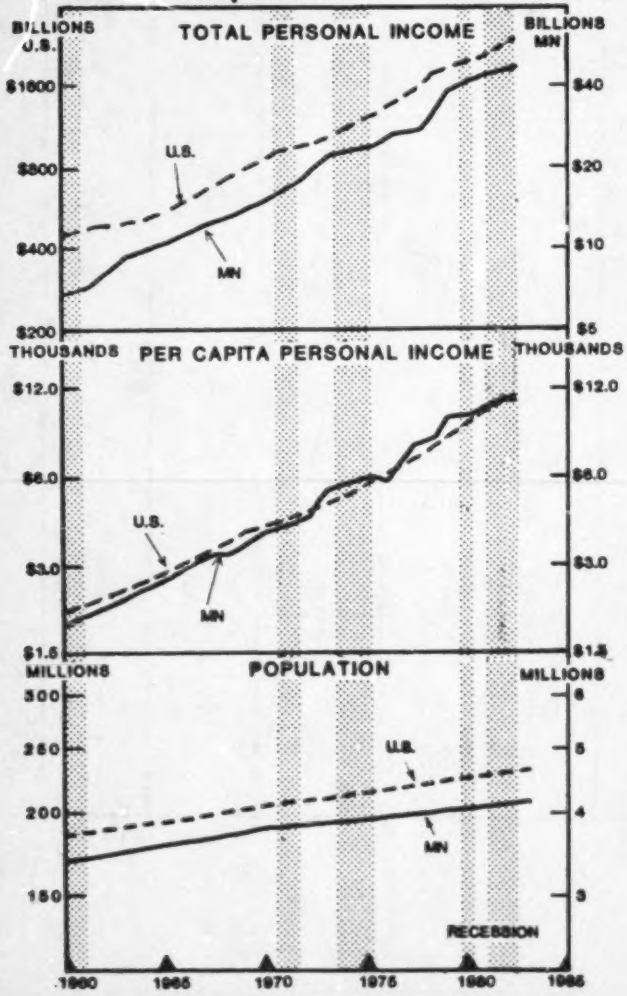
Consumer Price Index- Major Components



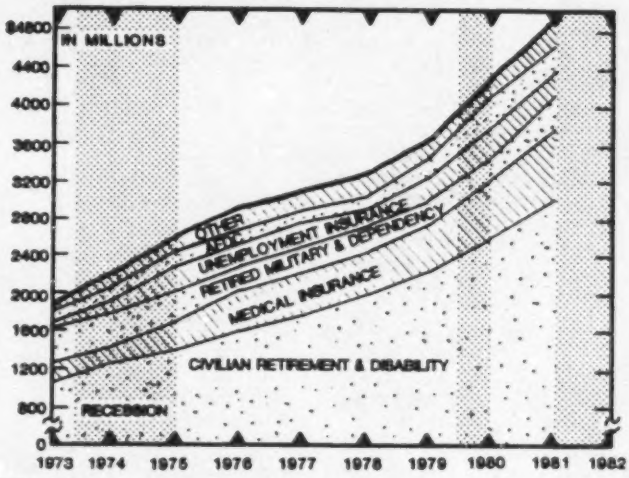
% Δ From Dec. 1982



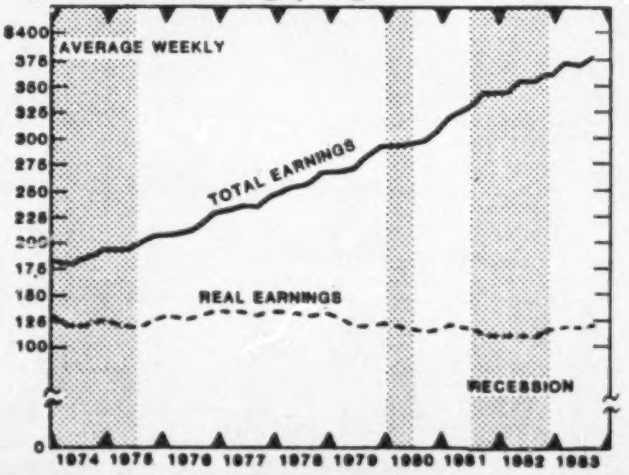
U.S. & MN Personal Income And Population



Government Transfer Payments To Individuals In Minnesota



Minnesota Earnings, Mfg.



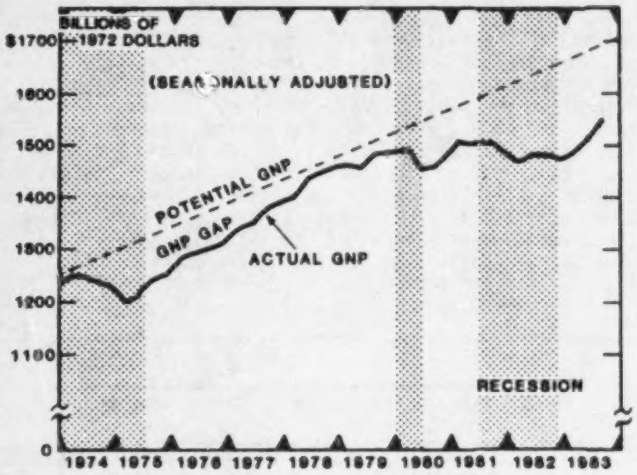
Output, Expenditures, Money, & Credit Conditions

The overall level and composition of National Output shape labor market conditions, and nominal and real earnings. (Nominal values are not adjusted for inflation; real values are adjusted for inflation.) Personal Consumption Expenditures, especially on Durable Goods, together with data on Retail Sales, are frequently used as indicators of future levels of employment. The number of Building Permits influences the level of employment in construction and related industries. The Federal Budget Deficit is a key indicator of the stimulatory effect of government policy. Whether this effect results in inflation, improved employment conditions, or some combination of the two, depends in part, upon the degree to which present productive capacity is utilized. Present and anticipated Money and Credit Conditions determine the ability of consumers, business, and State and Local governments to borrow in order to finance purchases, which, in turn, generate income and employment. Unfortunately, most data of this kind is available only for the Nation. However, in an economy as interdependent as ours, analysis of the directions of change of key national indicators is a useful tool for understanding the course of the State economy.

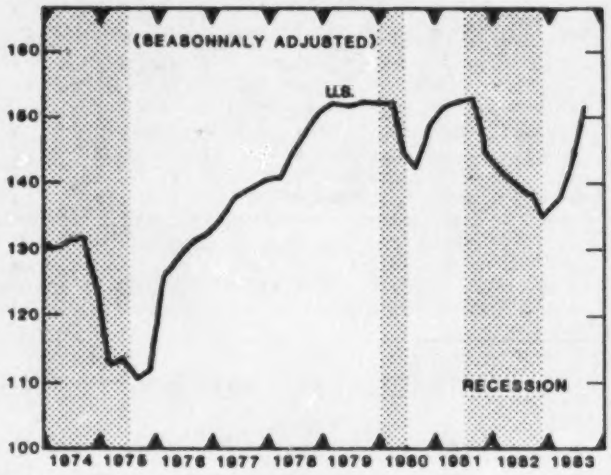
Output, Expenditure, Money, And Credit Conditions	MINNESOTA			UNITED STATES		
	III Qtr. 1983	Percent Change from		III Qtr. 1983	Percent Change from	
		Last Qtr.	Year Ago		Last Qtr.	Year Ago
OUTPUT AND EXPENDITURE						
Retail Sales (in millions of dollars)	1845	0.7	12.0	98985	1.3	10.6
Private Housing Units Authorized by Building Permits 1/	23736	-17.2	-44.3	1647	0.2	63.6
Index of Industrial Production 2/	n.a	n.a	n.a	151.6	4.9	9.7
Gross National Product (in billions of 1972 dollars) 3/	n.a	n.a	n.a	1544.4	1.9	4.6
Personal Consumption Expenditures	n.a	n.a	n.a	1019.2	0.9	5.0
Durable Goods	n.a	n.a	n.a	158.6	1.3	14.8
As Percent of Pers. Cons.	n.a	n.a	n.a	15.6	0.6	9.9
Nondurable Goods	n.a	n.a	n.a	379.5	1.3	4.1
Services	n.a	n.a	n.a	481.1	0.4	2.8
Gross Private Domestic Investment	n.a	n.a	n.a	230.4	9.6	16.1
As Percent of GNP	n.a	n.a	n.a	14.8	7.2	10.4
Nonresidential, Fixed	n.a	n.a	n.a	168.7	3.5	3.3
Residential	n.a	n.a	n.a	56.9	8.2	55.9
Net Exports	n.a	n.a	n.a	8.7	-29.3	-63.8
Government Purchases	n.a	n.a	n.a	296.1	1.4	1.3
Federal	n.a	n.a	n.a	119.6	1.7	2.3
State and Local	n.a	n.a	n.a	176.6	1.2	0.7
GNP Gap (Full Empl. Minus Present GNP)						
1972 Dollars (in billions)	n.a	n.a	n.a	141.6	-10.6	-12.0
Current Dollars (in billions)	n.a	n.a	n.a	306.3	-9.9	-8.5
Current Federal Budget Deficit 4/						
As Percent of GNP	n.a	n.a	n.a	-5.6	-5.1	-5.1
Inventory to Sales: Durable Goods in Mfg.	n.a	n.a	n.a	1.95	-4.9	-16.7
New Orders to Shipments: Durable Goods	n.a	n.a	n.a	1.02	-1.5	7.4
Plant Capacity Utilization Rate in Mfg. 5/	n.a	n.a	n.a	77.3	4.7	8.9
MONEY AND CREDIT CONDITIONS						
Interest Rates						
Discount Rate	8.50	0.0	-21.5	8.50	0.0	-21.5
Prime Rate	n.a	n.a	n.a	10.80	2.9	-26.6
Rate on Conventional Mortgages	12.28	-3.5	-14.2	12.70	-0.2	-18.0
Federal Funds Rate	n.a	n.a	n.a	9.46	7.5	-14.1
Consumer Installment Credit Outstanding	n.a	n.a	n.a	363095	4.2	8.3
As Percent of Disposable Personal Income	n.a	n.a	n.a	15.4	1.6	0.5

Output, Expenditures, Money, & Credit Conditions

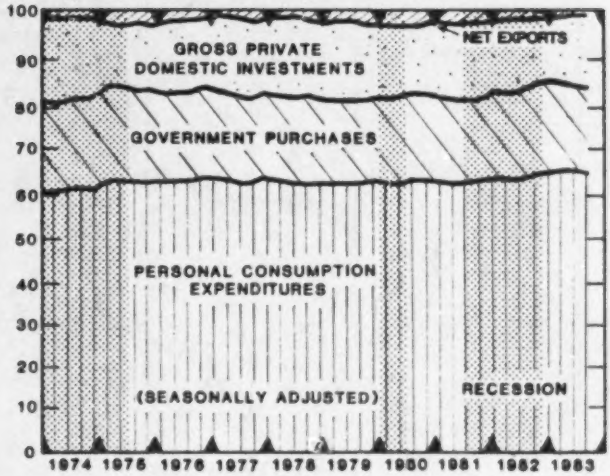
Potential & Seasonally Adjusted GNP



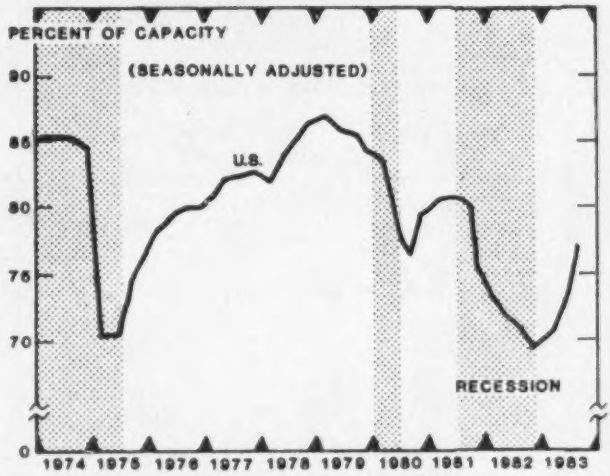
Index of Industrial Production



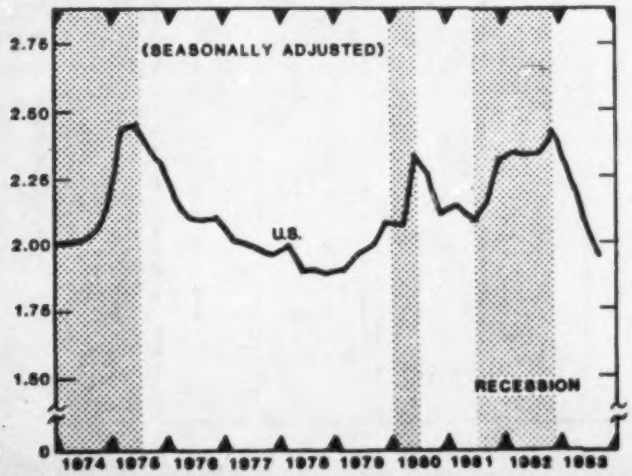
Composition of GNP in Percent



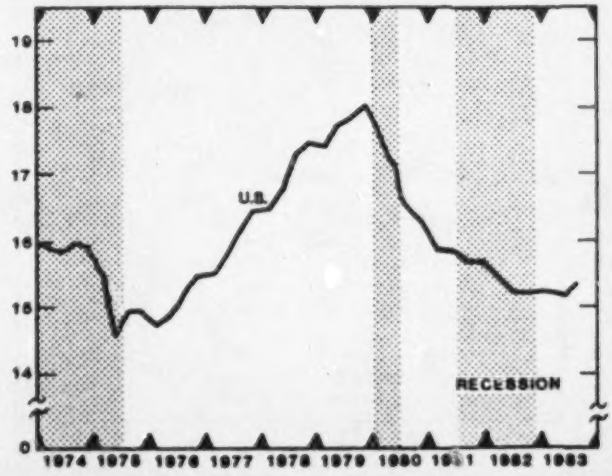
Plant Utilization Rates, Mfg.



Ratio, Inventory to Sales, Durable Mfg.



Ratio, Consumer Installment Debt to Disposable Personal Income, U.S.



Technical Notes

For the reader's convenience the notes which follow are organized in sequence for the pages which appear in the statistical section. Each note corresponds to the footnote or reference notation for the given page.

* Wherever an asterick appears the data is seasonlly adjusted.

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1/ Four percent is a generally agreed upon criteria for measuring full employment. It allows for the movement of persons between jobs. Labor Force Unemployment Rate less four percent, based on official estimates.
2/ Estimated worker hours expended in nonfarm payroll employment as a percent of potential worker hours assuming that each member of the nonfarm labor payroll labor force was employed at a standard rate of 40 hours per week.

Page S-3

1/ The handbook unemployment rate is the estimate of unemployment prior to the Current Population Survey (CPS) adjustment.

Page S-7

1/ In billions of dollars at an annual rate.
2/ The contribution to total Personal Income of wages, salaries, and other labor income. Percent change entry in Labor Income Impact is the percent that the change in labor income comprises of the change in total Personal Income. This is not available for Minnesota on a quarterly basis.
3/ The figure for the quarter is the contribution to total Personal Income of proprietor's rental, dividend, and interest income. The percent change entry in Property Income Impact is analogous to the Labor Income Impact described in 2/ above.
4/ The contribution to total Personal Income of transfer payments (unemployment compensation, AFDC, etc.) The percent change entry is analogous to the Labor Income Impact in 2/ above.
5/ In dollars at an annual rate.
6/ In dollars per week.
7/ Real average weekly earnings are the average weekly earnings of production workers in manufacturing divided by the CPI.
8/ Annual data.
9/ Value is CPI-W (Urban Wage earners and clerical workers).

Page S-9

1/ U.S. data annualized in thousands. Source: Bureau of the Census.
2/ Base Year is 1967. Source: Federal Reserve Board.
3/ Totals may not add due to rounding.
4/ Values shown in percent change columns are deficit as percent of GNP for period cited.
5/ Source: Federal Reserve Board.

Available Publications

Employment, Hours, and Earnings, January 1970-February 1983, Minneapolis-St. Paul Area (April 1983)

1980 Occupational Employment Statistics in Minnesota (May 1982)

1981 Occupational Employment Statistics in Minnesota (November 1982)

Important Minnesota Occupations by Industry (January 1983)

Minnesota Employment Outlook to 1985 (January 1981)

Review of Labor and Economic Conditions and its Monthly Supplement (Recent Issues)

Unemployment Compensation Program Statistics: Total Wages, Taxable Wages, Contributions Due, and Benefits Paid, 1950-1978 (April 1980)

Minnesota Employment and Wage data by County (Fourth Quarter 1982) Limited number available for 1975-1981

Average Covered Employment & Wages by Economic Region for the Calendar Year 1982 by two Digits of Industry (also available for 1976-1981)

Minnesota Labor Market Information Directory (April 1982)

1983 Minnesota Salary Survey by Area (September 1983)

1983 Minnesota Hospitals and Nursing Homes Salary Survey (September 1983)

1983 Minnesota Wage Data by Industry and Size of Firm (September 1983)

Labor Market Information Summary for 1983 for Minneapolis-St. Paul SMSA (August 1983), St. Cloud SMSA (August 1983), Duluth-Superior (October 1983), and Minnesota (September 1983)

Cyclical Sensitivity in Minnesota (August 1981)

These publications are available upon request while supply lasts.

Write to: Director, Research and Statistical Services Office
Minnesota Department of Economic Security
390 North Robert Street
St. Paul, Minnesota 55101

12/12/83 S4160-3 A

CURRENT MINNESOTA LABOR MARKET CONDITIONS

October, 1983 Supplement to The Review of Labor and Economic Conditions

Prepared by the Research and Statistical Services Office, MN Dept. of Economic Security, 390 N. Robert St., St. Paul MN 55101, in cooperation with the U.S. Department of Labor, Bureau of Labor Statistics, and Employment and Training Admin.

Nation

The Nation's economy accelerated in September as nearly all of the major economic indicators displayed more strength than in August. It now appears that the recovery is still stronger than was expected and that the economy will grow faster in the fourth quarter than was predicted earlier.

The employment picture was brightened by a drop in unemployment and by gains in both total and nonfarm payroll employment. The seasonally adjusted unemployment rate fell 0.2 of a percentage point to 9.3 percent in September after holding at 9.5 percent in July and August. Economists had not expected that the rate would drop this far by the ninth month of the recovery. Also, total employment (seasonally adjusted) rose by 382,000 in September and has grown by 2.9 million since the recession low in December. Meanwhile, seasonally adjusted nonfarm payroll employment jumped by 733,000 in September as nearly 700,000 striking workers returned to work. Most of the non-strike related growth in September was in the more cyclically sensitive construction and manufacturing industries.

Other sectors of the economy also showed more strength than in earlier months. The third quarter growth in real Gross National Product which was reported at 7.0 percent in the "flash" estimate was revised upward to 7.9 percent in the latest release. Also, retail sales, industrial production and personal income were stronger than in August. However, housing starts fell rather steeply in September, apparently reflecting the rise in interest rates during the summer.

State

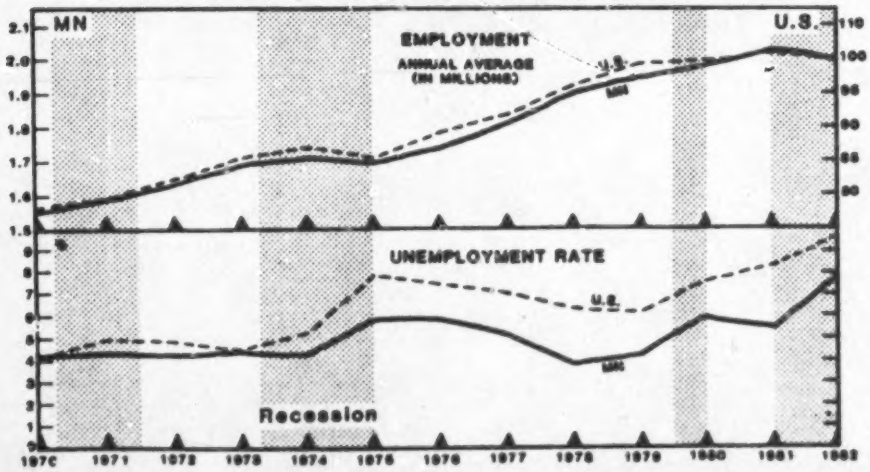
The Minnesota economy gave out mixed signals in September. Although the September unemployment rate dropped sharply compared to past years, and total employment rose at a considerably steeper rate than normal in September, seasonally adjusted nonfarm payroll employment showed little strength in September.

Minnesota's seasonally unadjusted unemployment rate fell by a strong 0.7 of a percentage point to 6.5 percent in September. The average August to September change in the rate is a decline of 0.2 percentage points. Also, total employment, which normally would drop by 0.3 percent between August and September, rose by 0.6 percent this September. Moreover, the over-the-year gain in total employment was a healthy 2.7 percent cent, the largest since October 1981. On the other hand, seasonally adjusted nonfarm payroll employment would have risen by only about 500 if the workers on strike had not returned to work. Employment in mining and construction (seasonally adjusted) declined in September, while durable goods manufacturing employment, also seasonally adjusted, showed no change in September.

The available leading indicators also showed somewhat differing trends. While the seasonally adjusted average workweek in manufacturing has been edging upward since April, data for July and August indicate that permits for private housing (also seasonally adjusted) will be lower in the third quarter than in the first half of the year.

Labor Force Estimates	MINNESOTA (Numbers in '000's)			UNITED STATES (Numbers in '000,000's)		
	September 1983	Change From Last Mo.	Change From Year Ago	September 1983	Change From Last Mo.	Change From Year Ago
Civilian Labor Force	2219.2	-3.4	39.7	112.2	-1.4	1.6
Employed	2074.2	12.2	54.2	102.4	-0.8	2.5
Unemployed	145.0	-15.6	-14.5	9.8	-0.6	-0.9
Unemployment Rate						
Actual	6.5	-0.7	-0.8	8.8	-0.4	-0.9
Seasonally Adjusted	n.a	n.a	n.a	9.3	-0.2	-0.9

MN and the U.S., Employment & Unemployment Rate



MN, 1982 and 1983